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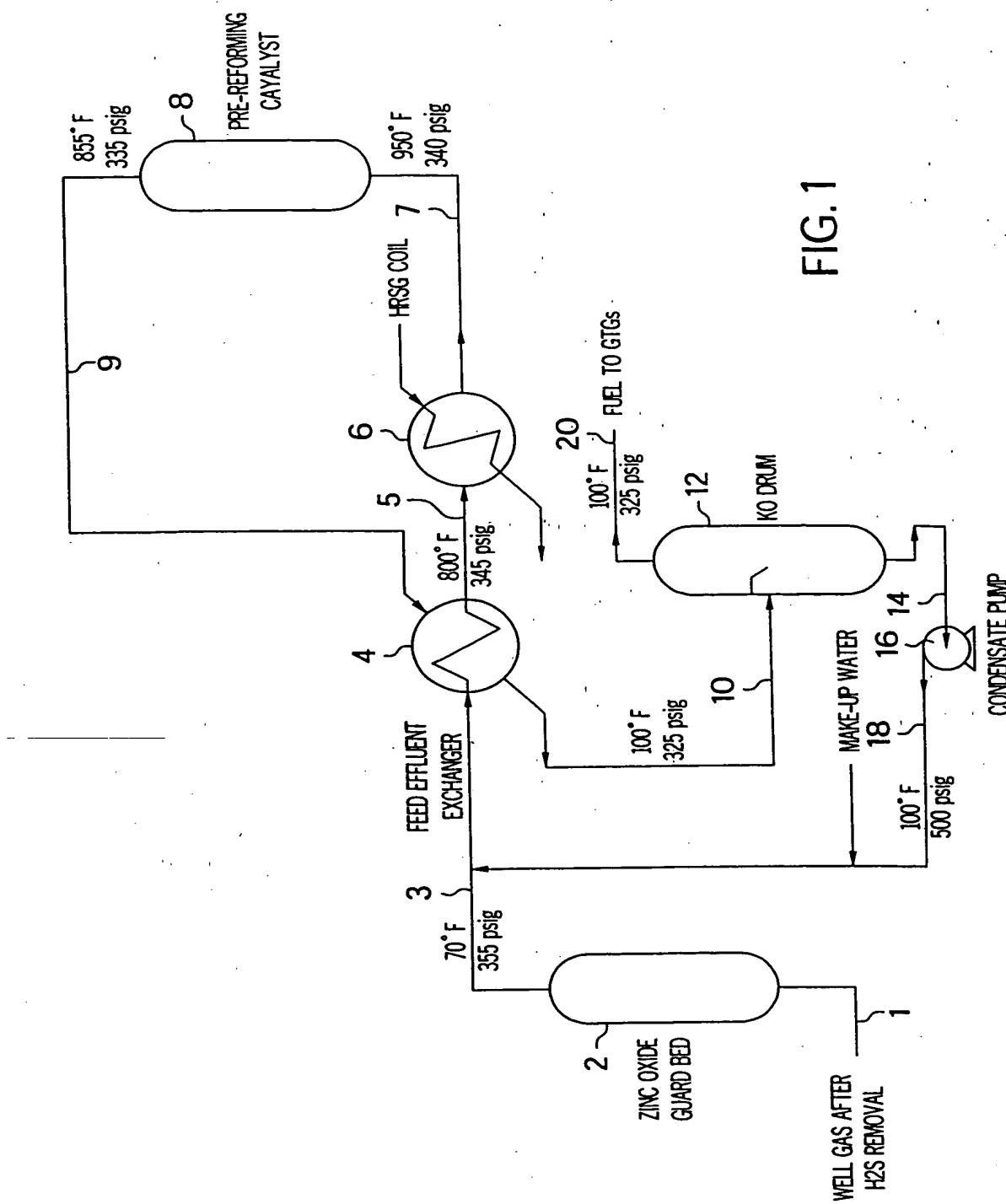


FIG. 1

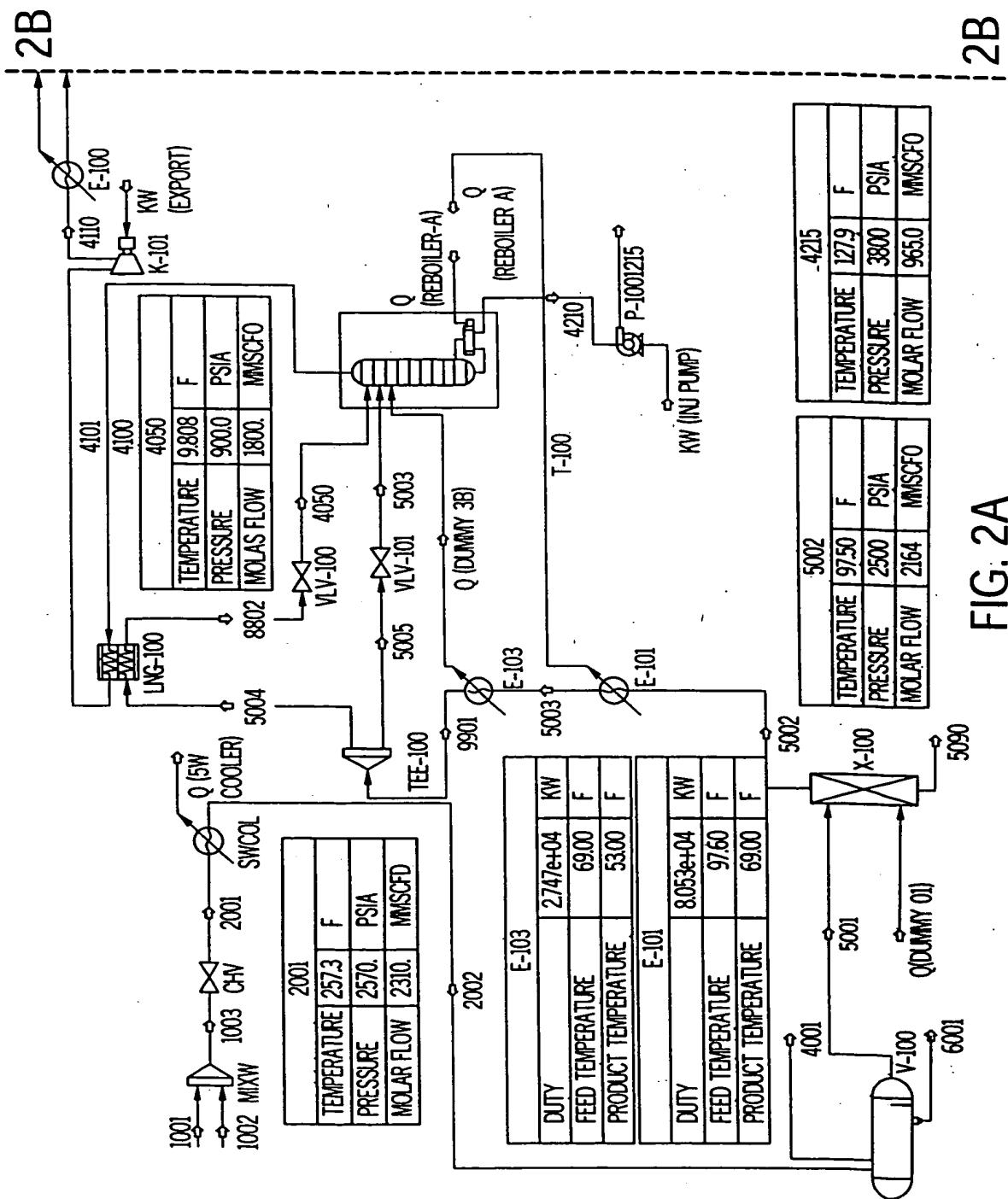
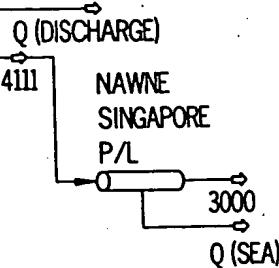
**2B**

FIG. 2A

3 / 4

2A



FEEDPRESSURE	2980	PSIA
INSIDE DIAMITER	34.00	IN
PRODUCT VAPOR FRACTION	1.000	

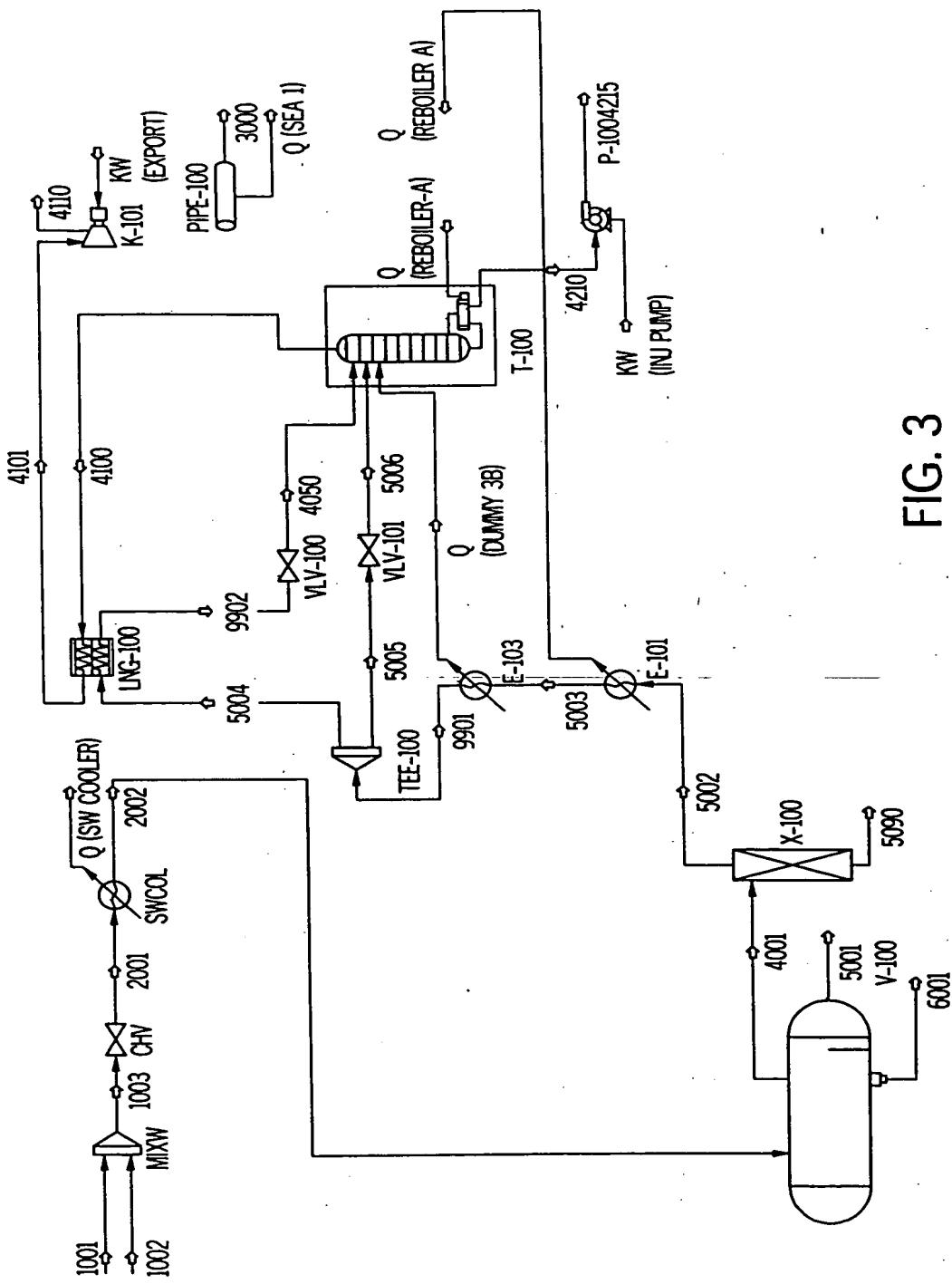
3000		
TEMPERATURE	80.85	F
PRESSURE	900.7	PSIA
MOLAR FLOW	1199	MMSCFD
CO ₂ MOLE FRAC	0.5249	
C ₁ MOLE FRAC	0.4576	

K-101		
FEED PRESSURE	690.0	PSIA
PRODUCT PRESSURE	3000	PSIA
MOLAR FLOW	1199	MMSCFD
ENERGY	5.118e+04	KW

P-100		
DELTA P	2800	PSIA
ENERGY	2.034e+04	KW
FEED PRESSURE	900.0	PSIA
PRODUCT PRESSURE	3800	PSIA
MOLAR FLOW	965.0	MMSCFD

2A

FIG. 2B



3
FIG

Reflux 2570 FWHP 1378 Mscfd

	Composition			Heat Content, BTU/SCF			HHV BTU/SCF	OWHD BTU/SCF	Prod Recy
	Feed	Sale/Fuel	Fuel	Waste	Feed	Sales	Fuel	Waste	
Instant Mscfd	2500	1378.0	36.9	1122.0					
Instant An. Ave.	1925.0	1061.1	28.4	863.9					
GBTUD					734.1	656.9	17.61	66.8	
GBTUD					565.2	505.8	13.6	51.5	
% HC Loss GBTUD							2.38%	9.02%	11.39%
N2	0.004108	0.007412	0.000050	0	0	0	0	0	0.0
CO2	0.712909	0.523522	0.945507	0	0	0	0	0	40%
H2S	0.005659	0.003471	0.008346	0	0	0	0	0	34%
C1	0.268371	0.458954	0.034304	271	464	464	35	1010.0	94%
C2	0.005106	0.005190	0.005003	9	9	9	9	1769.6	56%
C3	0.001599	0.000980	0.002359	4	2	2	2	2516.1	34%
IC4	0.000399	0.000164	0.000164	1	1	1	1	3251.9	23%
nC4	0.000398	0.000131	0.000131	0.000726	1	0	0	3262.3	18%
IC5	0.000198	0.000042	0.000042	0.00039	1	0	0	4000.9	12%
nC5	0.000492	0.000087	0.000087	0.000989	2	0	0	4008.9	10%
C6+	0.000756	0.000000	0.000000	0	4	0	0	5502.5	0%
H2O	0.000005	0.000047	0.000047	0	0	0	0	0.0	100%
Totals	1.0000000	1.000000	1.000000	0.998362	294	477	477	60	

Availability = 77%

Power, MW	Total	GT1	GT2	Elec	LM6000
Refrigeration R404a/CO	0.00	0.00			44,500 HP @ 90F
SG1	58.85	58.85			33,184 kW @ 90F
SG2	0.00	0.00			6,644 Heat Rate, BTU/hp
CO2 Injection Pump	23.50			23.50	7,096 GBTU/D @ full power
Cond Flash Gas	0.00			0.00	
Total MW	82.35	0.00	58.85	23.50	
No. of LM6000s	2	0	1	1	
Fuel GBTU/D	17.61	-	12.58	5.03	

Total Horsepower	110,431	HP
HC Sales	624	Mscfd HC
		HP/Mscfd

2500 psi 1200 M at 45% C1.hsc					
Cas (Main)					
Str ams					
Name	1001	1002	1003	2001	2002
Vapour Fraction	0.0000	1.0000	1.0000	0.9736	0.0000
Temperature (F)	712.9	300.0*	300.0*	257.3	80.00*
Pressure (psia)	5746.*	5746.*	5746.*	2570.*	2550.
Molar Flow (MMSCFD)	142.0*	2168.*	2310.	2310.	2310.
Mass Flow (lb/hr)	2.809e+05	8.681e+06	8.982e+06	8.962e+06	8.962e+06
Liquid Volume Flow (barrel/day)	1.927e+04	8.751e+05	8.944e+05	8.944e+05	8.944e+05
Heat Flow (kW)	-4.965e+05	-9.053e+06	-9.550e+06	-9.550e+06	-9.842e+06
Comp Mole Frac (Nitrogen)	0.00008	0.0041*	0.0038	0.0038	0.0038
Comp Mole Frac (CO2)	0.00008	0.7121*	0.6683	0.6683	0.6683
Comp Mole Frac (H2S)	0.0000*	0.0053*	0.0050	0.0050	0.0050
Comp Mole Frac (Methane)	0.00008	0.2678*	0.2513	0.2513	0.2513
Comp Mole Frac (Ethane)	0.0000*	0.0051*	0.0048	0.0048	0.0048
Comp Mole Frac (Propane)	0.0000*	0.0016*	0.0015	0.0015	0.0015
Comp Mole Frac (H2O)	1.0000*	0.0007*	0.0622	0.0622	0.0622
Name	3000	4001	4050	4100	4101
Vapour Fraction	1.0000	1.0000	0.3125	1.0000	1.0000
Temperature (F)	80.85	80.00	9.808	11.65	30.27
Pressure (psia)	900.7	2550.	900.0*	900.0	890.00
Molar Flow (MMSCFD)	1199.	0.0000	1800.	1199.	1199.
Mass Flow (lb/hr)	4.080e+06	0.0000	7.210e+06	4.060e+06	4.080e+06
Liquid Volume Flow (barrel/day)	4.822e+05	0.0000	7.271e+05	4.822e+05	4.822e+05
Heat Flow (kW)	-4.039e+06	0.0000	-7.759e+06	-4.080e+06	-4.066e+06
Comp Mole Frac (Nitrogen)	0.0074	0.0041	0.0041	0.0074	0.0074
Comp Mole Frac (CO2)	0.5249	0.7083	0.7123	0.5249	0.5249
Comp Mole Frac (H2S)	0.0035	0.0053	0.0053	0.0035	0.0035
Comp Mole Frac (Methane)	0.4576	0.2668	0.2683	0.4576	0.4576
Comp Mole Frac (Ethane)	0.0052	0.0051	0.0051	0.0052	0.0052
Comp Mole Frac (Propane)	0.0010	0.0016	0.0016	0.0010	0.0010
Comp Mole Frac (H2O)	0.0000	0.0056	0.0000	0.0000	0.0000
Name	4110	4111	4210	4215	5001
Vapour Fraction	1.0000	1.0000	0.0000	0.0000	0.0000
Temperature (F)	219.6	120.0*	65.00	127.9	80.00
Pressure (psia)	3000.*	2980.	900.0	3800.*	2550.
Molar Flow (MMSCFD)	1199.	1199.	965.0	965.0	2176.
Mass Flow (lb/hr)	4.080e+06	4.080e+06	4.585e+06	4.585e+06	8.689e+06
Liquid volume Flow (barrel/day)	4.822e+05	4.822e+05	3.917e+05	3.917e+05	8.755e+05
Heat Flow (kW)	-4.015e+06	-4.077e+06	-5.165e+06	-5.145e+06	-9.310e+06
Comp Mole Frac (Nitrogen)	0.0074	0.0074	0.0000	0.0000	0.0041
Comp Mole Frac (CO2)	0.5249	0.5249	0.9451	0.9451	0.7083
Comp Mole Frac (H2S)	0.0035	0.0035	0.0075	0.0075	0.0053
Comp Mole Frac (Methane)	0.4576	0.4576	0.0332	0.0332	0.2668
Comp Mole Frac (Ethane)	0.0052	0.0052	0.0050	0.0050	0.0051
Comp Mole Frac (Propane)	0.0010	0.0010	0.0024	0.0024	0.0016
Comp Mole Frac (H2O)	0.0000	0.0000	0.0000	0.0000	0.0056

Appendix For Fig. 2 Pg 2.

2500 psi 1200 M at 45% C1.hsc					
Case (Main)					
Streams					
Name	5002	5003	5004	5005	5006
Vapour Fraction	1.0000	0.0000	0.0000	0.0000	0.3721
T Temperature (F)	97.50	69.00*	53.00	53.00	14.30
Pressure (psia)	2500.*	2490.	2480.	2480.	900.0*
Molar Flow (MMSCFD)	2164.	2164.	1800.	363.5	363.5
Mass Flow (lb/hr)	8.665e+06	8.665e+06	7.210e+06	1.456e+06	1.456 +06
Liquid Volume Flow (barrel/day)	8.739e+05	8.739e+05	7.271e+05	1.468e+05	1.468e+05
Heat Flow (kW)	-9.231e+06	-9.281e+06	-7.745e+06	-1.564e+06	-1.564e+06
Comp Mole Frac (Nitrogen)	0.0041	0.0041	0.0041	0.0041	0.0041
Comp Mole Frac (CO2)	0.7123	0.7123	0.7123	0.7123	0.7123
Comp Mole Frac (H2S)	0.0053	0.0053	0.0053	0.0053	0.0053
Comp Mole Frac (Methane)	0.2683	0.2683	0.2683	0.2683	0.2683
Comp Mole Frac (Ethane)	0.0051	0.0051	0.0051	0.0051	0.0051
Comp Mole Frac (Propane)	0.0016	0.0016	0.0016	0.0016	0.0016
Comp Mole Frac (H2O)	0.0000	0.0000	0.0000	0.0000	0.0000
Nam	5090	6001	9901	9902	kW (Export)
Vapour Fraction	-	0.0000	0.0000	0.0000	-
T Temperature (F)	-	80.00	53.00*	43.00*	-
Pressure (psia)	15.00*	2550.	2480.	2470.	-
Molar Flow (MMSCFD)	12.10	134.1	2164.	1800.	-
Mass Flow (lb/hr)	2.394e+04	2.726e+05	8.665e+06	7.210e+06	-
Liquid Volume Flow (barrel/day)	1642.	1.888e+04	8.739e+05	7.271e+05	-
Heat Flow (kW)	-	-5.325e+05	-9.309e+06	-7.759e+06	5.119e+04
Comp Mole Frac (Nitrogen)	0.0000	0.0000	0.0041	0.0041	-
Comp Mole Frac (CO2)	0.0000	0.0190	0.7123	0.7123	-
Comp Mole Frac (H2S)	0.0000	0.0003	0.0053	0.0053	-
Comp Mole Frac (Methane)	0.0000	0.0000	0.2683	0.2683	-
Comp Mole Frac (Ethane)	0.0000	0.0000	0.0051	0.0051	-
Comp Mole Frac (Propane)	0.0000	0.0000	0.0016	0.0016	-
Comp Mole Frac (H2O)	1.0000	0.9807	0.0000	0.0000	-
Name	kW (Inj Pump)	Q(Discharge)	Q(dummy 3B)	Q(dummy-01)	Q(Reboiler A)
Vapour Fraction	-	-	-	-	-
T Temperature (F)	-	-	-	-	-
Pressure (psia)	-	-	-	-	-
Molar Flow (MMSCFD)	-	-	-	-	-
Mass Flow (lb/hr)	-	-	-	-	-
Liquid Volume Flow (barrel/day)	-	-	-	-	-
Heat Flow (kW)	2.034e+04	6.221e+04	2.747e+04	-	5.053e+04
Comp Mole Frac (Nitrogen)	-	-	-	-	-
Comp Mole Frac (CO2)	-	-	-	-	-
Comp Mole Frac (H2S)	-	-	-	-	-
Comp Mole Frac (Methane)	-	-	-	-	-
Comp Mole Frac (Ethane)	-	-	-	-	-
Comp Mole Frac (Propane)	-	-	-	-	-
Comp Mole Frac (H2O)	-	-	-	-	-

Reflux 850 PSIA @ 2070 FWHP

	Composition			Heat Content, BTU/SCF			BTU/SCF	HHV BTU/SCF	OVHD Recy	Prod Recy
	Feed	Sale/Fuel	Fuel	Waste	Feed	Sales	Fuel	Waste		
Instant Mscfd	1081	614.8	17.1	466.2						
An. Ave. Mscfd	1027.0	584.1	16.3	442.9						
Instant GBTUD					317.4	285.9	7.97	27.0		
An. Ave. GBTUD					301.5	271.6	7.8	25.7		
% HC Loss GBTUD						2.48%	8.42%	10.90%		
N2	0.004108	0.007207	0.000021	0	0	0	0	0	0.0	100%
CO2	0.712909	0.535264	0.947178	0	0	0	0	0	0.0	43%
H2S	0.005659	0.003558	0.008430	0	0	0	0	0	0.0	36%
C1	0.268371	0.447200	0.032541	271	452	452	33	1010.0	95%	5%
C2	0.005106	0.005267	0.004894	9	9	9	9	1769.6	59%	41%
C3	0.001599	0.001010	0.001010	4	3	3	3			
iC4	0.000399	0.000168	0.000168	1	1	1	1	2	3251.9	24%
nC4	0.000398	0.000134	0.000134	1	0	0	0	2	3262.3	19%
IC5	0.000198	0.000043	0.000043	1	0	0	0	2	4000.9	12%
nC5	0.000492	0.000087	0.000087	2	0	0	0	4	408.9	10%
C6+	0.000756	0.000000	0.000000	0	4	0	0	0	5502.5	0%
H2O	0.000005	0.000062	0.000062	0	0	0	0	0	0.0	0%
Totals	1.000000	1.000000	1.000000	0.998317	294	27.56	465	465	58	

Availability = 95%

Power MW	Total	GT1	GT2	Elec	LM6000
Refrigeration R404a/CO	0.00	0.00			44,500 HP @ 90F
SG1	27.56	27.56			33,184 kW @ 90F
SG2	0.00	0.00			6,644 Heat Rate, BTU/hp
CO2 Injection Pump	9.69			9.69	7,096 GBTUD @ full power
Cond Flash Gas	0.00			0.00	
Total MW	37.25	0.00	27.56	9.69	
No. of LM6000s	2	0	1	1	
Fuel GBTUD	7.97	-	5.89	2.07	

Total Horsepower	49,952	HP
HC Sales	271	Mscfd HC
	184	HP/Mscfd

Dehy & Reflux Column 2070 FWHP.hsc					
Main: Streams					
Streams					
Name	1001	1002	1003	2001	2002
Vapour Fraction	0.0000	1.0000	1.0000	0.9681	0.9408
Temperature (F)	712.9	300.0*	300.0*	244.0	80.00*
Pressure (psia)	5746.*	5746.*	5746.	2070.*	2050.
Molar Flow (MMSCFD)	71.00*	1084.*	1155.	1155.	1155.
Mass Flow (lb/hr)	1.404e+05	4.340e+06	4.481e+06	4.481e+06	4.481e+06
Liquid Volume Flow (barrel/day)	9636.	4.376e+05	4.472e+05	4.472e+05	4.472e+05
Heat Flow (kW)	-2.483e+05	-4.527e+06	-4.775e+06	-4.775e+06	-4.911e+06
Comp Mole Frac (Nitrogen)	0.0000*	0.0041*	0.0038	0.0038	0.0038
Comp Mole Frac (CO2)	0.0000*	0.7121*	0.6683	0.6683	0.6683
Comp Mole Frac (H2S)	0.0000*	0.0053*	0.0050	0.0050	0.0050
Comp Mole Frac (Methane)	0.0000*	0.2678*	0.2513	0.2513	0.2513
Comp Mole Frac (Ethane)	0.0000*	0.0051*	0.0048	0.0048	0.0048
Comp Mole Frac (Propane)	0.0000*	0.0016*	0.0015	0.0015	0.0015
Comp Mole Frac (H2O)	1.0000*	0.0007*	0.0622	0.0622	0.0622
Name	3000	4001	4050	4100	4101
Vapour Fraction	-	1.0000	0.3738	1.0000	1.0000
Temperature (F)	-	80.00	9.978	10.99	26.03
Pressure (psia)	-	2050.	850.0*	850.0	840.00
Molar Flow (MMSCFD)	-	1087.	900.0	614.7	614.7
Mass Flow (lb/hr)	-	4.342e+06	3.604e+06	2.112e+08	2.112e+06
Liquid Volume Flow (barrel/day)	-	4.376e+05	3.635e+05	2.472e+05	2.472e+05
Heat Flow (kW)	-	-4.639e+06	-3.874e+06	-2.118e+06	-2.113e+06
Comp Mole Frac (Nitrogen)	-	0.0041	0.0041	0.0072	0.0072
Comp Mole Frac (CO2)	-	0.7092	0.7123	0.5352	0.5352
Comp Mole Frac (H2S)	-	0.0053	0.0053	0.0036	0.0036
Comp Mole Frac (Methane)	-	0.2672	0.2683	0.4473	0.4473
Comp Mole Frac (Ethane)	-	0.0051	0.0051	0.0053	0.0053
Comp Mole Frac (Propane)	-	0.0016	0.0016	0.0010	0.0010
Comp Mole Frac (H2O)	-	0.0043	0.0000	0.0000	0.0000
Name	4110	4210	4215	5001	5002
Vapour Fraction	1.0000	0.0000	0.0000	0.0000	1.0000
Temperature (F)	225.2	60.01	118.6	80.00	82.33
Pressure (psia)	3000.*	850.0	3800.*	2050.	2000.*
Molar Flow (MMSCFD)	614.7	467.2	467.2	0.0000	1082.
Mass Flow (lb/hr)	2.112e+06	2.221e+06	2.221e+06	0.0000	4.333e+06
Liquid Volume Flow (barrel/day)	2.472e+05	1.897e+05	1.897e+05	0.0000	4.369e+05
Heat Flow (kW)	-2.085e+06	-2.504e+06	-2.495e+06	0.0000	-4.617e+06
Comp Mole Frac (Nitrogen)	0.0072	0.0000	0.0000	0.0041*	0.0041
Comp Mole Frac (CO2)	0.5352	0.9453	0.9453	0.7092*	0.7123
Comp Mole Frac (H2S)	0.0036	0.0076	0.0076	0.0053*	0.0053
Comp Mole Frac (Methane)	0.4473	0.0328	0.0328	0.2672*	0.2683
Comp Mole Frac (Ethane)	0.0053	0.0049	0.0049	0.0051*	0.0051
Comp Mole Frac (Propane)	0.0010	0.0024	0.0024	0.0016*	0.0016
Comp Mole Frac (H2O)	0.0000	0.0000	0.0000	0.0043*	0.0000

Appendix For Fig. 3 Pg. 2

Dehy & Reflux C Column 2070 FWHP.hsc						
Main: Streams						
Streams						
Name	5003	5004	5005	5006	5090	
Vapour Fraction	1.0000	0.0000	0.0000	0.4201	-	
Temperature (F)	62.00*	50.00	50.00	13.33	-	
Pressure (psia)	1990.	1980.	1980.	850.0*	15.00*	
Molar Flow (MMSCFD)	1082.	900.0*	181.9	181.9	4.671	
Mass Flow (lb/hr)	4.333e+06	3.604e+06	7.285e+05	7.285e+05	9239.	
Liquid Folume Flow (barrell/day)	4.369e+05	3.635e+05	7.348e+04	7.346e+04	633.9	
Heat Flow (kW)	-4.639e+06	-3.869e+06	-7.819e+05	-7.819e+05	-2.193e+04	
Comp Mole Frac (Nitrogen)	0.0041	0.0041	0.0041	0.0041	0.0000	
Comp Mole Frac (CO2)	0.7123	0.7123	0.7123	0.7123	0.0000	
Comp Mole Frac (H2S)	0.0053	0.0053	0.0053	0.0053	0.0000	
Comp Mole Frac (Methane)	0.2683	0.2883	0.2683	0.2683	0.0000	
Comp Mole Frac (Ethane)	0.0051	0.0051	0.0051	0.0051	0.0000	
Comp Mole Frac (Propane)	0.0016	0.0016	0.0016	0.0016	0.0000	
Comp Mole Frac (H2O)	0.0000	0.0000	0.0000	0.0000	1.0000	
Name	6001	9901	9902	Kw(Export)	kW (Inj Pump)	
Vapour Fraction	0.0000	0.0000	0.0000	-	-	
Temperature (F)	80.00	50.00*	43.00*	-	-	
Pressure (psia)	2050.	1980.	1970.	-	-	
Molar Flow (MMSCFD)	68.43	1082.	900.0	-	-	
Mass Flow (lb/hr)	1.390e+05	4.333e+06	3.604e+06	-	-	
Liquid Folume Flow (barrell/day)	9630	4.369e+05	3.835e+05	-	-	
Heat Flow (kW)	-2.718e+05	-4.651e+06	-3.874e+06	2.756e+04	9694.	
Comp Mole Frac (Nitrogen)	0.0000	0.0041	0.0041	-	-	
Comp Mole Frac (CO2)	0.0187	0.7123	0.7123	-	-	
Comp Mole Frac (H2S)	0.0003	0.0053	0.0053	-	-	
Comp Mole Frac (Methane)	0.0000	0.2683	0.2683	-	-	
Comp Mole Frac (Ethane)	0.0000	0.0051	0.0051	-	-	
Comp Mole Frac (Propane)	0.0000	0.0016	0.0016	-	-	
Comp Mole Frac (H2O)	0.9810	0.0000	0.0000	-	-	
Name	Q(dummy 3B)	Q(Reboiler A)	Q(Reboiler-A)	Q(Sea 1)	Q(SW Cooler)	
Vapour Fraction	-	-	-	-	-	
Temperature (F)	-	-	-	-	-	
Pressure (psia)	-	-	-	-	-	
Molar Flow (MMSCFD)	-	-	-	-	-	
Mass Flow (lb/hr)	-	-	-	-	-	
Liquid Folume Flow (barrell/day)	-	-	-	-	-	
Heat Flow (kW)	1.206e+04	2.142e+04	2.141e+04	-	1.360e+05	
Comp Mole Frac (Nitrogen)	-	-	-	-	-	
Comp Mole Frac (CO2)	-	-	-	-	-	
Comp Mole Frac (H2S)	-	-	-	-	-	
Comp Mole Frac (Methane)	-	-	-	-	-	
Comp Mole Frac (Ethane)	-	-	-	-	-	
Comp Mole Frac (Propane)	-	-	-	-	-	
Comp Mole Frac (H2O)	-	-	-	-	-	

Appendix For Fig. 3 Pg. 3